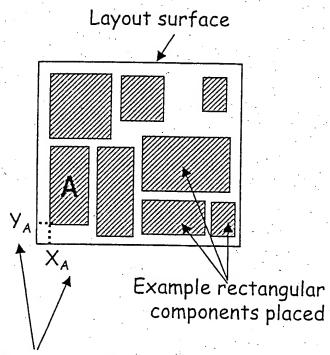
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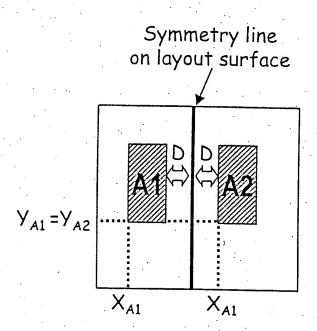
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Component A's (x,y) coordinates relative to layout surface

Figl (Prior Art)

 $\partial/3\partial$ 

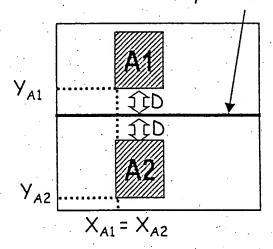


Components A1 and A2 are symmetrically placed about the vertical symmetry line

Fig 2 ( prior arT)

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Symmetry line on layout surface



Components A1 and A2 are symmetrically placed about the horizontal symmetry line

Fig.3 (prior art)

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Fig 4

One example component "R"

( Prior arT)

















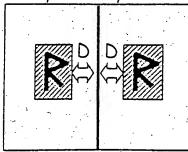
8 possible geometric orientations for any component "R"

Fig 5 (prior art)

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Symmetry line



Components placed with simple symmetric pair constraint

Fig 6 Cprior art)

Symmetry line

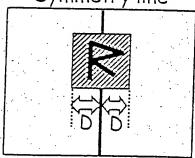
Components placed with mirror symmetric pair constraint

Fig 7

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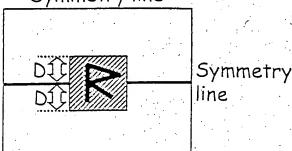
Symmetry line



Component placed with self-symmetry constraint (vertical symmetry line)

Fig 8 c prior art)

Symmetry line



Component placed with self-symmetry constraint (horizontal symmetry line)

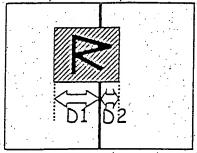
Fig 9

(Prior arT)

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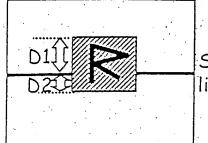
Symmetry line ...



Component placed with asymmetry constraint (vertical symmetry line)

Fig 10 (Prior art)

Symmetry line



Symmetry line

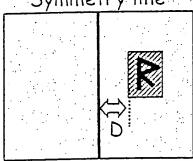
Component placed with asymmetry constraint (horizontal symmetry line)

Fig. 11
1 prior art)

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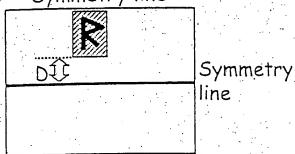
Symmetry line



Component placed with fixed symmetric offset constraint (vertical symmetry line)

Fig 12 (prior arT)

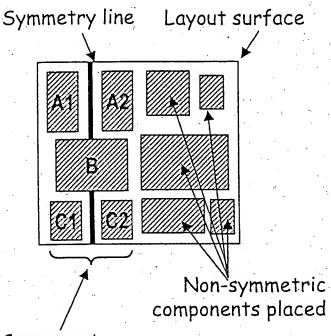
Symmetry line



Component placed with fixed symmetric offset constraint (horizontal symmetry line)

Fig 13 ( prior arT)

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Components
A1-A2, B, C1-C2
obey various symmetry
constraints.

Fig 14 (Prior arT)

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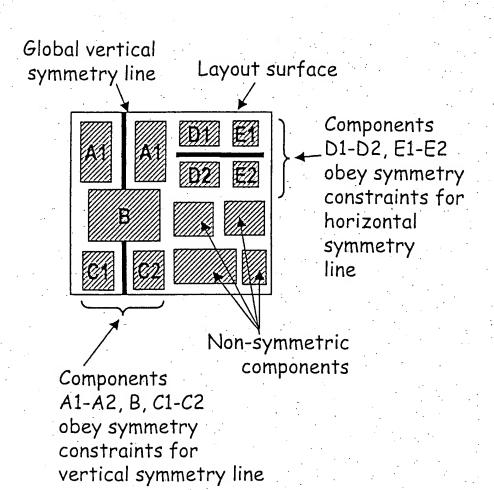
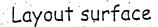
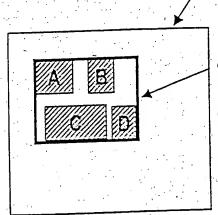


Fig 15 (Prior arT)

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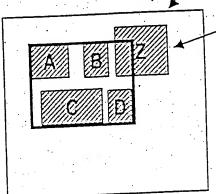




Components
A,B,C,D define
a group, with a
minimum bounding
rectangle (bold line)

Fig 16 (prior grT)

Layout surface

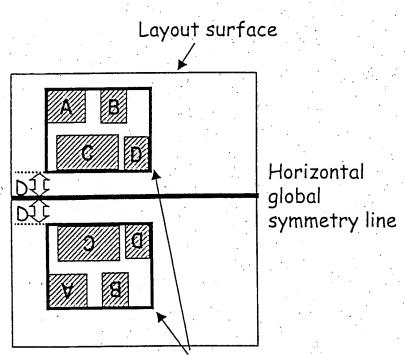


It is <u>illegal</u> for components not in this group to be placed anywhere inside (or overlapping) this minimum bounding rectangle. Here, Z's location is illegal

FIS 17 (Prior arT)

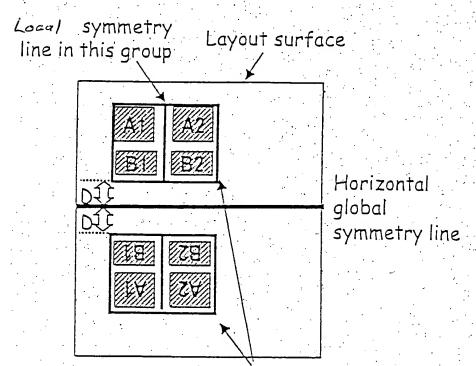
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Group A,B,C,D and its symmetric sibling placed with a group symmetric pair constraint, relative to a global horizontal symmetry line

Fig 18 (prior art) 13/32

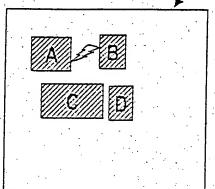


Each Group A1,A2,B1,B2 has a local symmetry line and the entire group and its symmetric sibling are placed with a group symmetric pair constraint relative to a global horizontal symmetry line

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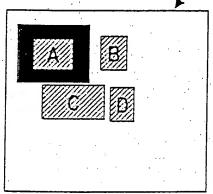
Layout surface



Component A is sensitive to electrical disruption from component B.

Fig 20 (Prior arT)

Layout surface



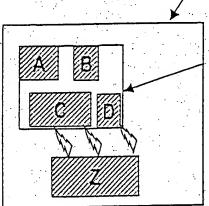
An isolation structure placed around the perimeter of component A can mitigate this. A's size in this placement problem increases, and spacing rules to neighbors change, too

Fig 01 (prior arT)

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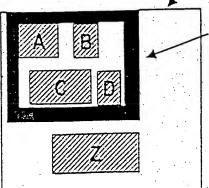
Layout surface



Group A,B,C,D is sensitive to electrical disruption from component Z.

Fig 22 (prior art)

Layout surface



An isolation structure placed around the perimeter of group A,B,C,D can mitigate this.
Group's size in this placement problem increases, and spacing rules to neighbors change, too

Fig 23 (Prior a,T)

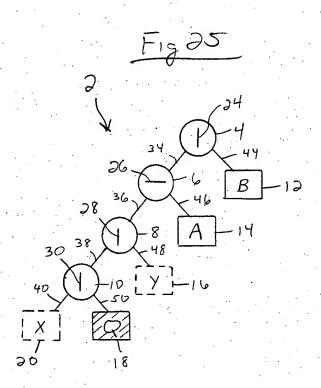
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16 /32 Fig. 24

	Size	
Placement Constraint	Width	Height
Non-Symmetric	2 .	2
Non-Symmetric	1	5
Symmetric*	3	2
Non-Symmetric	2	5
Non-Symmetric	1	5
	Non-Symmetric Non-Symmetric Symmetric* Non-Symmetric	Placement ConstraintWidthNon-Symmetric2Non-Symmetric*1Symmetric*3Non-Symmetric2

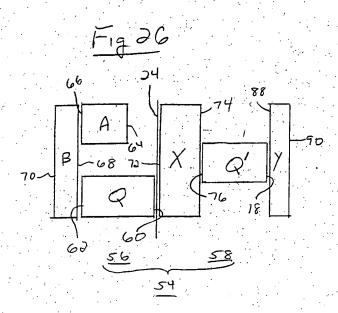
<sup>\*</sup> Component can be designated for pair-symmetric, selfsymmetric, asymmetric, or fixed symmetric offset placement.

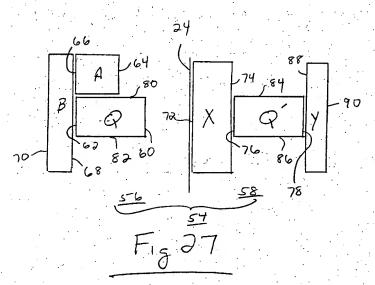
Attorney Docket No.: 2879-030564



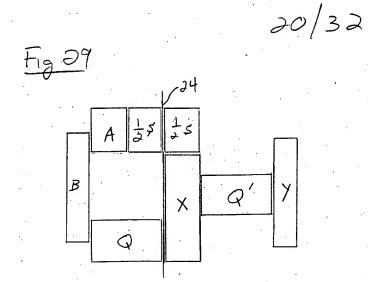
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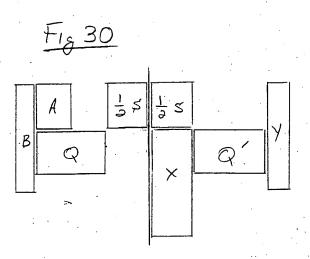






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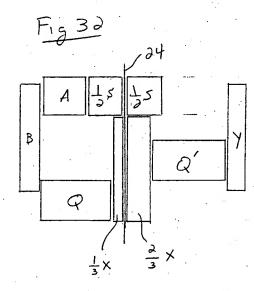
= place on cleft side of global symmetry line 24

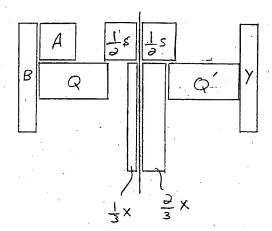
[ ] = place on right side of global symmetry line ay

= place pair-symmetrically on both siles of global symmetry line 24

= place self-symmetrically on both sides of global symmetry linedy

= place Asymmetrically on both sides of global symmetry line dy





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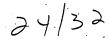
= place on Neft side of global symmetry line 24

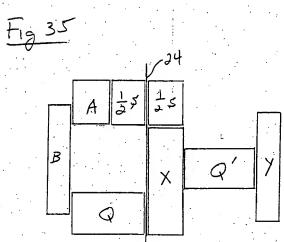
= place on right side of global
symmetry line of

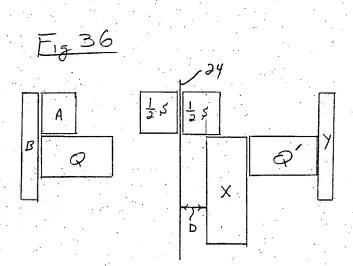
= place pair-symmetrically on both sites of global symmetry line 24

= place self-symmetrically on both sides of global symmetry linedy

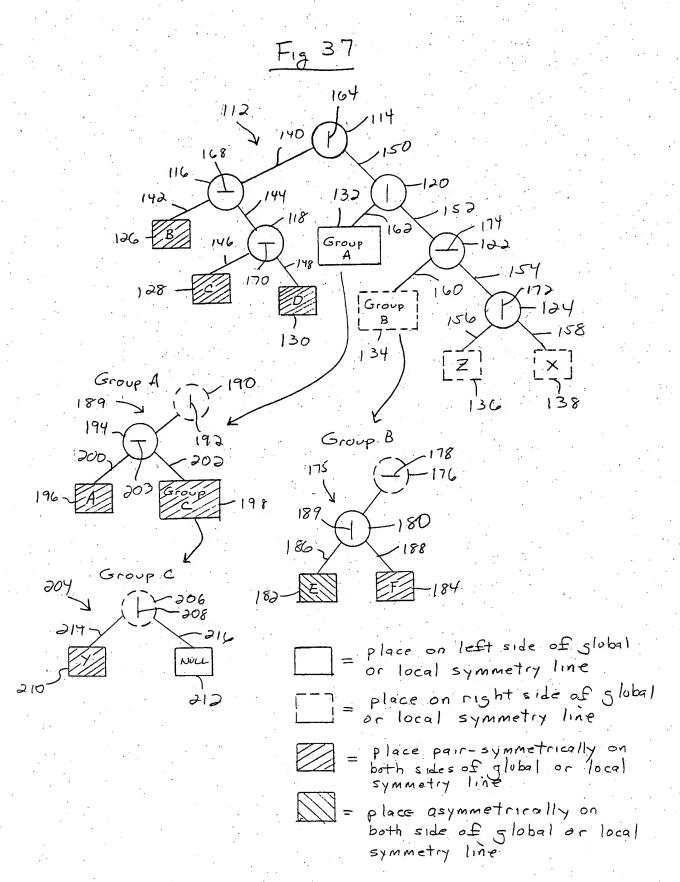
= place fixed symmetric offset to one side of global symmetry line dy (dashed outline = place on right side; solid outline = place on left side)



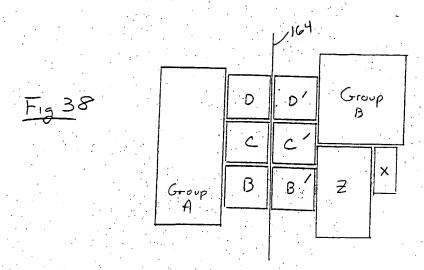


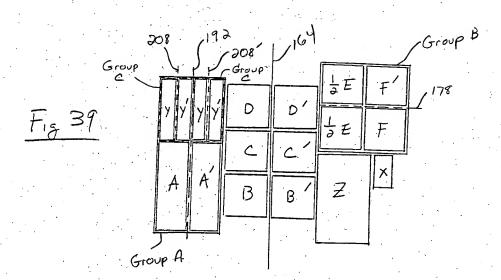


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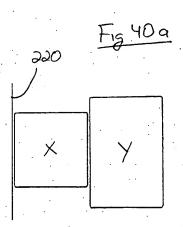


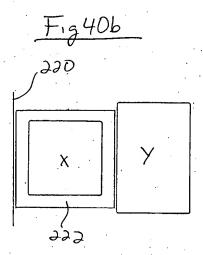
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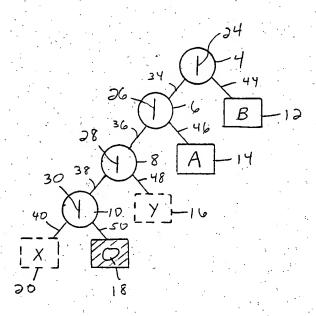
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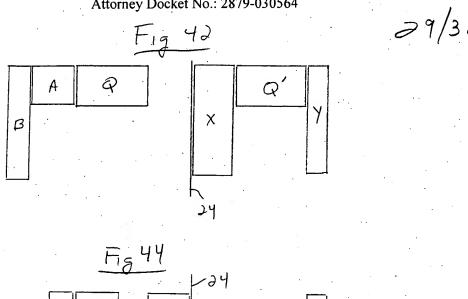


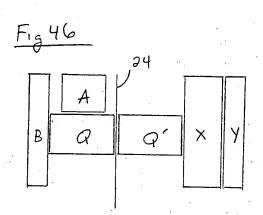
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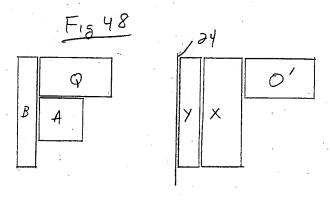
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